



Cutoff and Backout in the CBP Watershed Model

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Watershed Technical Workgroup Meeting
September 3, 2020



WTWG Agenda

10:00 AM – Introductions and Announcements – Cassandra Davis, NYSDEC (30 min.)

- Approval of the August Minutes
- 8/31/2020 deadline for the 2020 progress scenario data prior to Dec. 1 BMP data + finalize NEIEN Appendix and DET – Olivia Devereaux, Devereux Consulting
- CAST 2021 suggestions due by 9/9/2020
- Federal facility planning goals – Vanessa Van Note, EPA
- BMP Verification Ad- Hoc Action Team – update Vanessa Van Note, EPA
- Member and participant announcements

10:30 AM – Overview of Back-out and Cut-off Procedures – Jeff Sweeney, EPA (30 min.)

Jeff will give an overview of back-out and cut-off procedures to the WTWG.

11:00 AM – Schedule for TMDL-Related Scenarios – Jeff Sweeney, EPA (15 min.)

Jeff will provide an update on the 2020 Progress scenario schedule and other model-related tasks.

11:15 PM – Meeting Adjourn



Cutoff

- “Cutoff” (aka “excess” in CAST’s “BMP submitted versus credited” report) identifies that the implementation level of a BMP within the submitted spatial scale of the BMP – exceeds a 100% implementation level.
 - For example, the acres of BMP submitted or planned in a county exceeds the land use acres in that county that are available for the BMP.



Cutoff

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- For a plan, BMPs are often input as a percent implementation level rather than BMP units, to eliminate cutoff of planned BMPs.



Cutoff

- For a progress scenario, cutoff is typically due to:
 - Over-reporting of BMPs
 - Inaccuracies in the land use acres/animal populations that the BMPs apply to
 - There will be improvements in land use/land cover with new high-resolution data, more so for non-agricultural land uses



Cutoff

2019 Progress Scenario, CBP Watershed

BMP Unit	AmountSubmitted (unit)	Excess (unit)	TotalAmountCredited (unit)
Feet	4,140,368	267	4,140,101
Systems	109,721	344	109,377
Acres	15,929,863	714,429	15,215,435
Animal Units	10,840,052	4,520,419	6,319,632
Animal Waste Management System			
Dairy Precision Feeding and/or Forage Management			
Mortality Composters			
Poultry Litter Amendments (alum, for example)			
Riparian Fence			
Dry Tons of Manure Transport	176,416	39,183	137,233
BMP Unit		Excess (%)	TotalAmountCredited (%)
Feet		0.01%	99.99%
Systems		0.31%	99.69%
Acres		4.48%	95.52%
Animal Units		41.70%	58.30%
Animal Waste Management System			
Dairy Precision Feeding and/or Forage Management			
Mortality Composters			
Poultry Litter Amendments (alum, for example)			
Riparian Fence			
Dry Tons of Manure Transport		22.21%	77.79%



Back-out

- “Backout” is the subtraction of historic land use change practices put in place prior to a fixed baseline for the model’s land use.
- For example, in Phase 6, the fixed baseline was 2012 since CBP had hard land use/landcover data for that year – 2012 Census of Agriculture and high-resolution landcover.



Back-out

- All land use changes that occurred through 2012 were assumed to be represented in the 2012 base condition data, and thus are “backed out” from the cumulative land use BMP changes from 2013 and beyond.
- This ensures the change is not credited twice.



Back-out

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- For example, there are 100 acres of trees planted in a land-river segment in the urban sector through 2012, cumulative.
 - In 2013, 10 newly reported acres are added to the 100 acres previously reported = 110 acres are reported for BMP implementation accounting, i.e. the CAST BMP Summary report.



Back-out

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- However, only the 10 newly reported acres of urban tree planting (Tree Planting – Canopy) are simulated in the model to yield load reductions.
 - Buildings and Other + Roads converted to Tree Canopy over Impervious
 - Turf Grass converted to Tree Canopy over Turf Grass
- The backout (of urban tree planting acres through 2012) continues until another set of land use/landcover data would capture those “new” acres.



Back-out

- For BMPs like Forest Buffers, backout only affects the historic land use change.
- The upland benefit of all cumulative buffers remains.



Back-out

- Septic systems are also backed out.
- New data that captures historic systems comes from sewer service area boundaries.



Back-out

- Currently, the backout baseline for land use change BMPs is 2017.
 - 2017 Census of Agriculture
 - 2013 – 2015 land use acres; Chesapeake Conservancy data



Back-out

- In reality, the new landcover data may not recognize the newly planted trees – or the Ag Census may not explicitly pick up the converted land, but it is assumed that they do.
- It's important to understand one of the key purposes of the CBP Watershed Model; it's a management tool.



Back-out

- Progress scenarios are not meant to depict every on-the-ground condition exactly for a particular year.
- Progress scenarios are what-if scenarios assuming BMPs are fully functioning once implemented – a steady-state long-term condition.
 - By 2025, have all practices and controls installed to achieve the Bay's dissolved oxygen, water clarity/submerged aquatic vegetation and chlorophyll a standards



Back-out

Land Use Change BMPs

- Ag Forest Buffers + Narrow
- Ag Grass Buffers + Narrow
- Tree Planting- Ag + Urban
- Land Retirement
- Carbon Sequestration/
Alternative Crops
- Urban Forest Buffers
- Urban Forest Planting
- Urban Grass Buffers
- Impervious Surface
Reduction
- Abandoned Mine
Reclamation
- Wetland Restoration
- Wetland Creation
- Wetland
Enhance/Rehabilitate



Cutoff

2019 Progress Scenario, CBP Watershed

	AmountSubmitted	AmountBackedOut	AmountNotBackedOut
BMP Unit	(unit)	(unit)	(unit)
Feet	4,140,368	0	4,140,368
Systems	109,721	63,591	46,131
Acres	15,929,863	284,771	15,645,092
		AmountBackedOut	AmountNotBackedOut
BMP Unit		(%)	(%)
Feet		0.00%	100.00%
Systems		57.96%	42.04%
Acres		1.79%	98.21%



Schedule for TMDL-Related Scenarios

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Model-Related Schedule

2020 Progress

- September 9, 2020 – Feedback due on items, updates, and/or actions you would like to see addressed in future versions of CAST
 - Hilary Swartwood (swartwood.hilary@epa.gov) and Jeff Sweeney (sweeney.jeff@epa.gov).



Model-Related Schedule

2020 Progress

- ~~• July 31, 2020 — BMP listing, descriptions, and mapping due from jurisdictions for any proposed BMPs that will be submitted for that year's progress assessment that are NOT included in the NEIEN Appendix.~~
- ~~• July 31, 2020 — Requests to modify the NEIEN Schema or Plug-In due~~
- NEIEN Appendix and DET are posted and final as of 8/31/20 for 2020 Progress scenario



Model-Related Schedule

2020 Progress

- September 1, 2020 – Jurisdictions are encouraged to begin submitting their BMP implementation to NEIEN for the progress assessment. Ongoing review of submissions will occur between September and December, with the expectation that December 1 submissions are final.
- Find helpful NEIEN links along with last year's submission reports on CAST under Progress Reporting.



Model-Related Schedule

2020 Progress Scenario Data Needs

- Previous year's data is assumed for the following if no state data is received. Previous year is 2013 for most jurisdictions AND for most of these seven data requests:
 - construction - defaults except VA and WV
 - harvested forest - defaults except VA
 - biosolids - previous year's data will be used
 - ag and urban spray irrigation - previous year's data will be used
 - RIB - previous year's data will be used
 - large monitored septic - previous year's data will be used
 - CSO pass thru factors - previous year's data will be used



CAST Biosolids Data

Jurisdiction Reporting for Annual Progress Model Scenario

Progress Data (submitted annually)	DC	DE	MD	NY	PA	VA	WV
Animals in permitted/non-permitted feeding space, number or percent	NA	2013	2013	2013	2013	2013	2013
Construction, acres	2019	None	2017	None	2015	2020	2020
Harvested forest, acres	NA	None	2013	None	None	2020	2020
Biosolids	NA	2013	2013	2013	2013	2013	2019
Agricultural spray irrigation	NA	2013	2019	2013	2013	2013	2013
Urban spray irrigation	NA	1985	2019	None	None	1985	2019
Rapid infiltration basins (RIB)	NA	1995	2019	None	None	None	None
Large monitored septic systems - commercial	NA	2016	None	None	None	2016	1995
Large monitored septic systems - residential	NA	1995	None	None	None	2016	None
CSO pass thru	2018	NA	2014	1984	2014	1999	2019



Model-Related Schedule

2020 Progress

- An updated version of the Point Source Data Submission app, aka the WasteWater or WaWa app, will be released in a couple of weeks.
- Along with facility data, the information includes the categories CSO, spray irrigation, large onsite systems, and rapid infiltration which continue to be submitted via spreadsheets using the templates provided at (<https://archive.chesapeakebay.net/VT/> Filename: WWTP_CS0_Biosolid_Irrigation_LargeOnsite_RIB_Input_Templates2016).



Model-Related Schedule

2020 Progress

- Federal agencies are to submit their data to states by October 1, 2020 so the states can incorporate the federal submissions into their overall submission.
- New templates are posted to CAST in the federal agency section. It is a good idea for federal agencies to check with states to ensure that those are the preferred template for each state.



Model-Related Schedule

2020 Progress

- December 1, 2020 – QA/QC'd final data to be submitted by jurisdictions, including any updates to BMP Verification Program Plans describing new data sources and changes to methods of tracking to CBPO – both wastewater data and non-wastewater BMPs.



Model-Related Schedule

2020 Progress

- Outstanding verification issues from EPA's assessment of 2019 progress BMP data and/or the jurisdiction's BMP Verification Program Plan (QAPP) should be addressed with the BMP data and QAPP submission for 2020 progress.
- Additional revisions to the jurisdictions' QAPPs may be necessary after December 1 as a result of EPA's review of each jurisdiction's 2020 Progress submissions.



Model-Related Schedule

2020 Progress

- February 8, 2021 – Final progress run information for progress available to jurisdictions – needed for outside reporting of progress on commitments and to keep results relevant.